

Amendment to the Claims

This listing of claims will replace the prior version in the application.

Claims

1. (previously presented) Process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium, zirconium or mixtures thereof, on an electrically conductive substrate; said process consisting of applying, to the said substrate, a solution comprising a non-aqueous solution of one or more metal acetylacetonates dissolved in a one or more solvents which specifically dissolve said one or more metal acetylacetonates, the one or more solvents being selected from the group consisting of alcohols, ketones, chloromethanes and mixtures thereof and then converting said one or more metal acetylacetonates to at least one metal oxide by means of a heat treatment; wherein the electrically conductive substrate is made of steel or of iron and is pretreated, in a first stage, and then, in a second stage, said non-aqueous solution of one or more metal acetylacetonates dissolved in a one or more solvents is deposited on said pretreated substrate and the substrate thus coated is dried and then calcined under air or an inert gas enriched with oxygen, at a temperature at least equal to 300°C, for a period of time ranging from 10 minutes to 2 hours .
2. (previously presented) Process according to Claim 1, characterized in that the precious metal from Group VIII of the Periodic Table of the elements is selected from the group consisting of ruthenium, rhodium, palladium, osmium, iridium and platinum.
3. (previously presented) Process according to Claim 2, characterized in that the precious metal is selected from the group consisting of ruthenium and iridium.
4. (previously presented) Process according to Claim 3, characterized in that the precious metal is ruthenium.
5. (previously presented) Process according to Claim 1, characterized in that the alcohol is selected from the group consisting of ethanol and isopropanol.

6. (previously presented) Process according to Claim 1, characterized in that the ketone is acetone.
7. (previously presented) Process according to Claim 1, characterized in that the chloromethane is chloroform.
8. (previously presented) Process according to Claim 1, characterized in that the metal acetylacetonate solution is obtained by dissolution of the said metal acetylacetonate in one or more specific solvents or in a mixture of solvents.
9. (previously presented) Process according to Claim 1, characterized in that said solution of one or more metal acetylacetonates is obtained by dissolution of the said one or more metal acetylacetonates in a mixture of said one or more solvents.
- 10-12. (canceled)
13. (previously presented) Process according to Claim 1, characterized in that the second stage is repeated at least once.
- 14-20. (canceled)
21. (previously presented) Process according to Claim 1 characterized in that said solution comprising several metal acetylacetonates is obtained by mixing solutions comprising a single metal acetylacetonate which is obtained by dissolution of the said metal acetylacetonate in a specific solvent or in a mixture thereof.
22. (previously presented) Process according to Claim 1, characterized in that the substrate coated by the one or more metal acetylacetonates is calcined under air or an inert gas enriched with oxygen, at a temperature of between 400°C and 600°C, for a period of time ranging from 10 minutes to 2 hours.

23. (previously presented) Process according to Claim 1, characterized in that the second stage is repeated between 2 and 6 times.
24. (previously presented) Process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium, zirconium or mixtures thereof, on an electrically conductive substrate; said process consisting of applying, to the said substrate, a solution comprising at least one organometallic compound and in then converting said at least one organometallic compound to at least one metal oxide by means of a heat treatment; wherein the electrically conductive substrate is made of steel or of iron and the sole solution applied to the said substrate is a non-aqueous solution of one or more metal acetylacetonates dissolved in a one or more solvents which specifically dissolve said one or more metal acetylacetonates, the one or more solvents being selected from the group consisting of alcohols, ketones, chloromethanes and mixtures thereof and wherein said substrate coated by the one or more metal acetylacetonates is calcined under air or an inert gas enriched with oxygen, at a temperature at least equal to 300°C, for a period of time ranging from 10 minutes to 2 hours.